QP CODE: 23800331

23800331

Reg No : .....

Name : .....

INTEGRATED PG DEGREE EXAMINATION, DECEMBER 2023

Third Semester

INTEGRATED MSC BASIC SCIENCE-CHEMISTRY

CORE - ICH3CR02 - ORGANIC CHEMISTRY - 1

2020 ADMISSION ONWARDS

C277328D

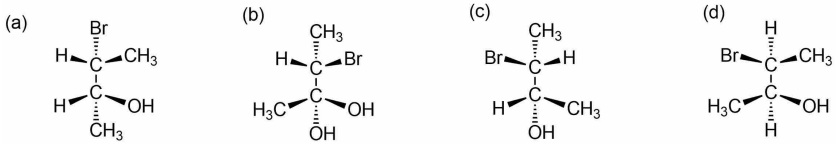
Time: 3 Hours Weightage: 30

Part A (Short Answer Questions)

*Answer any **eight** questions.*

*Weight **1** each.*

1. Define Isomerism. Explain Structural isomerism with examples.
2. Give methods for distinguishing geometrical isomers.
3. Write the structure of meso tartaric acid in Fischer projection and translate it into sawhorse projection.
4. Assign R and S configuration



5. Explain the stereochemistry and absolute configuration of biphenyls.
6. Explain the stereochemistry and absolute configuration of cyclophanes.
7. Explain the conformational energy diagram of cyclohexane.
8. Explain conformation of E2 elimination.
9. What is optical purity?
10. Explain substrate control asymmetric induction.

(8×1=8 weightage)

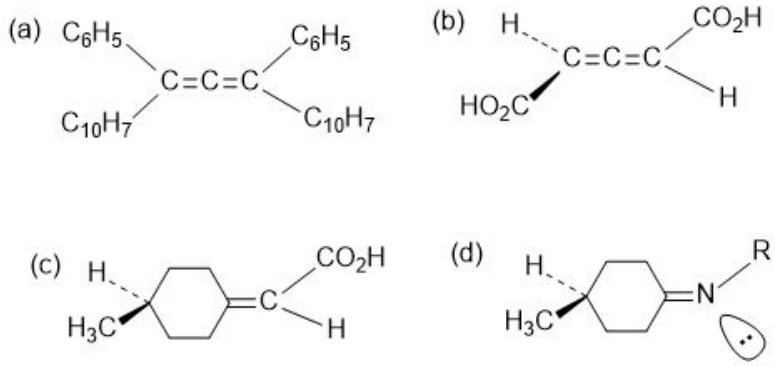
Part B (Short Essay/Problems)

*Answer any **six** questions.*

*Weight **2** each.*

11. write various conformations of tartaric acid .select a pair of a) diastereoisomers b) Enantiomers

12. illustrate the terms external and internal compensation.
13. Explain absolute configuration, enantiomers , racemic mixture and methods of resolution.
14. Explain constitutionally symmetrical and unsymmetrical chiral molecules with examples.
15. Explain the limitations of Baeyer's strain theory.
16. Explain with mechanism the nucleophilic addition to carbonyl compounds and give the conformations of the product.
17. Explain Curtin-Hammett Principle.
18. Assign R and S configuration



(6×2=12 weightage)

Part C (Essay Type Questions)

*Answer any **two** questions.*

*Weight **5** each.*

19. Give a brief account of methods which are used to establish the configuration of a pair of geometrical isomers.
20. Write notes on the following 1) axial chirality 2) Planar chirality and helical chirality with examples.
21. Explain topicity and prostereoisomerism. Explain Homotopic, enetiotopic, and diasterotopic atoms, groups and faces.
22. Draw the energy profile diagram for different conformations of cyclohexane and discuss their stability.

(2×5=10 weightage)